

Dr. Duke's Phytochemical and Ethnobotanical Database

Chemicals Found in *Juniperus communis*

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	(+)-AFZELICHIN	Fruit	--	--		
0	(+)-BETA-ELEMEN-7-ALPHA-OL	Fruit	--	--		
30	(+)-CATECHIN	Fruit	--	--		
30	(+)-CATECHIN	Leaf	--	--		
0	(+)-EPIGALLOCATECHIN	Fruit	--	--		Williamson, E. M. and Evans, F. J., Potter's New Cyclopaedia of Botanical Drugs and Preparations, Revised Ed., Saffron Walden, the C. W. Daniel Co., Ltd., Essex UK, 362 pp, 1988, reprint 1989.
7	(+)-GALLOCATECHIN	Fruit	--	--		Williamson, E. M. and Evans, F. J., Potter's New Cyclopaedia of Botanical Drugs and Preparations, Revised Ed., Saffron Walden, the C. W. Daniel Co., Ltd., Essex UK, 362 pp, 1988, reprint 1989.
0	(+)-JUNENOL	Plant	--	--		J.S. Glasby Dict.Pls Containing 2ndary Metabolite. 1991.

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	(-)-EPIAFZELICHIN	Fruit	--	--		Williamson, E. M. and Evans, F. J., Potter's New Cyclopaedia of Botanical Drugs and Preparations, Revised Ed., Saffron Walden, the C. W. Daniel Co., Ltd., Essex UK, 362 pp, 1988, reprint 1989.
38	(-)-EPICATECHIN	Fruit	--	--		
0	(DL)-MALIC-ACID	Leaf	--	--		
0	1,4-CINEOLE	Fruit	400	400	-0.44111885007210994	
0	1,4-DIMETHYL-CYCLOHEX-1-YL-METHYL-KETONE	Fruit	--	--		Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.
0	1,4-DIMETHYL-CYCLOHEX-3-ENYL-METHYL-KETONE	Fruit	--	--		Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
0	1-4-CINEOL	Fruit Essent. Oil	--	--		
0	1-4-CINEOL	Leaf Essent. Oil	--	--		
0	13,14-EPOXY-IMBRICATOLIC-ACID	Plant	--	--		Hegnauer, R. 1962-1997. Chemotaxonomie der Pflanzen, Bde 1-11. Birkhauser Verlag Basel, Boston, Berlin.

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	14,15-DIHYDROXY-LABDA-8(17),13(16)-DIEN-19-ACID	Plant	--	--		Hegnauer, R. 1962-1997. Chemotaxonomie der Pflanzen, Bde 1-11. Birkhauser Verlag Basel, Boston, Berlin.
0	15-HYDROXY-PENTADECANOIC	Fruit	--	--		Guenther, E., The Essential Oils, 6 volumes, D. van Nostrand, New York, 1948-1952.
0	3-ALPHA-15-DIHYDROXY-LABDA-8(17)-TRANS-13-DIENE	Leaf	--	500		
0	3-ALPHA-ACETOXY-ISOCUPRESSIC-ACID	Leaf	--	712.5		
0	3-ALPHA-HYDROXY-LABDA-8(17)-TRANS-12-14-TRIEN-19-OIC-ACID	Leaf	--	75		
0	3-ALPHA-HYDROXY-LABDA-8(17)-TRANS-13-DIEN-15-OIC-ACID	Leaf	--	75		
1	3-ALPHA-HYDROXYMANOOL	Leaf	--	2350		
0	4-ACETYL-1,4-DIMETHYL-1-CYCLOHEXENE	Plant	--	--		J.S. Glasby Dict.Pls Containing 2ndary Metabolite. 1991.
0	4-ETHOXY-P-MENTHEN-1-ENE	Flower	8	78		Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
0	5-ALPHA-HYDROXYABIETINIC-ACID	Plant	--	--		Hegnauer, R. 1962-1997. Chemotaxonomie der Pflanzen, Bde 1-11. Birkhauser Verlag Basel, Boston, Berlin.

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	8-ETHOXY-P-CYMENE	Fruit	4	45		Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
16	ACETIC-ACID	Fruit	--	9000	1.951794238179258	List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
0	AGATHADIOL	Fruit	--	--		
0	AGATHOLAL	Fruit	--	--		
0	ALLO-BETULIN	Stem	--	--		
0	ALLO-BETULIN	Leaf	--	--		
0	ALLO-BETULIN	Fruit	--	--		
0	ALPHA,BETA-DIMETHYLSTEROL	Fruit	4	40		List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
10	ALPHA-AMYRIN	Stem	--	--		
3	ALPHA-CADINOL	Fruit	--	--		
0	ALPHA-COPAENE	Fruit	3	33	-0.6445927707079909	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	ALPHA-COPAENE	Fruit Essent. Oil	--	--		
0	ALPHA-CUBEBENE	Fruit	4	45	-0.6188885832567323	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
0	ALPHA-HIMACHALINE	Plant	--	--		
2	ALPHA-HUMULENE	Fruit	19	192	-0.5022919640544935	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
0	ALPHA-KETO-GLUTARIC-ACID	Leaf	--	--		
0	ALPHA-MUUROLENE	Fruit	54	542	-0.13060058780802927	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
0	ALPHA-MUUROLENE	Fruit Essent. Oil	--	--		
11	ALPHA-PHELLANDRENE	Fruit	26	300	-0.4254028775207352	
11	ALPHA-PHELLANDRENE	Essential Oil	--	--		
28	ALPHA-PINENE	Fruit	530	9200	1.683156636347073	
28	ALPHA-PINENE	Fruit Essent. Oil	--	--		
28	ALPHA-PINENE	Essential Oil	--	336000	2.3965523753346103	

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
28	ALPHA-PINENE	Leaf Essent. Oil	--	--		
3	ALPHA-SELINENE	Fruit	21	210	-0.45885866517954543	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
13	ALPHA-TERPINENE	Fruit	16	640	3.1220141023253	
23	ALPHA-TERPINEOL	Fruit	3	40	-0.37559632876532734	
23	ALPHA-TERPINEOL	Essential Oil	--	2000	-0.6844703056368032	
0	ALPHA-TERPINYL-ACETATE	Fruit	--	--		
0	ALPHA-THUJENE	Fruit	24	240	-0.37432106883112565	List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
5	ALUMINUM	Fruit	19	61	-0.20577518900264186	
18	AMENTOFLAVONE	Leaf	--	--		
18	AMENTOFLAVONE	Plant	--	--		Newall, C. A., Anderson, L. A. and Phillipson, J. D. 1996. Herbal Medicine - A Guide for Health-care Professionals. The Pharmaceutical Press, London. 296pp.
0	AMENTOFLAVONE-DIMETHYL-ETHER	Leaf	--	--		

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	AMENTOFLAVONE-TRIMETHYL-ETHER	Leaf	--	--		
0	ANTICOPALOL	Fruit	--	--		
101	APIGENIN	Plant	--	--		Newall, C. A., Anderson, L. A. and Phillipson, J. D. 1996. <i>Herbal Medicine - A Guide for Health-care Professionals.</i> The Pharmaceutical Press, London. 296pp.
3	AROMADENDRENE	Fruit	2	2		
3	AROMADENDRENE	Fruit Essent. Oil	--	--		
112	ASCORBIC-ACID	Fruit	--	--		
112	ASCORBIC-ACID	Leaf	600	600	-0.3882477425426218	
0	ASH	Fruit	9920	32000	-0.6386766393183354	
20	BENZOIC-ACID	Leaf	--	--		
9	BETA-AMYRIN	Stem	--	--		
0	BETA-CADINENE	Leaf	--	--		Jeffery B. Harborne and H. Baxter, eds. 1983. <i>Phytochemical Dictionary. A Handbook of Bioactive Compounds from Plants.</i> Taylor & Frost, London. 791 pp.
53	BETA-CAROTENE	Fruit	4	12.2	-0.1272182489407809	

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	BETA-ELEMEN-7-ALPHA-OL	Fruit	--	--		
5	BETA-ELEMENE	Fruit	10	100	-0.4297005513117395	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
0	BETA-FENCHENE	Fruit	--	--		
2	BETA-MYRCENE	Essential Oil	--	110000	-0.2906195438526693	
3	BETA-PHELLANDRENE	Fruit	66	660	-0.3586028887711514	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
3	BETA-PHELLANDRENE	Leaf Essent. Oil	--	--		
3	BETA-PHELLANDRENE	Essential Oil	--	--		
3	BETA-PHELLANDRENE	Fruit Essent. Oil	--	--		
13	BETA-PINENE	Fruit	22	580	-0.2792614436195468	
13	BETA-PINENE	Essential Oil	--	25000	-0.1752769464817969	
3	BETA-SELINENE	Fruit	32	32	-1	
3	BETA-SELINENE	Fruit Essent. Oil	--	--		
47	BETA-SITOSTEROL	Fruit	--	--		

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
13	BETULIN	Fruit	--	--		Jim Duke's personal files.
13	BETULIN	Leaf	--	--		Jim Duke's personal files.
13	BETULIN	Stem	--	--		Jim Duke's personal files.
3	BILOBETIN	Leaf	--	--		
35	BORNEOL	Plant	--	--		Newall, C. A., Anderson, L. A. and Phillipson, J. D. 1996. Herbal Medicine - A Guide for Health-care Professionals. The Pharmaceutical Press, London. 296pp.
35	BORNEOL	Essential Oil	--	--		
0	BORNEOL-ACETATE	Essential Oil	--	4000	-0.7241445887911021	
0	BORNEOL-ACETATE	Fruit Essent. Oil	--	--		
12	BORNYL-ACETATE	Fruit	2	40	-0.7015317621173582	
4	CADINENE	Fruit Essent. Oil	--	--		
4	CADINENE	Fruit	--	--		
102	CAFFEIC-ACID	Leaf	--	--		
102	CAFFEIC-ACID	Fruit	--	--		
0	CALAMENENE	Fruit	71	71	-0.5933257121003137	

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
28	CALCIUM	Fruit	2632	8490	1.0692774780691343	
2	CAMPESTEROL	Fruit	--	--		Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.
9	CAMPHENE	Fruit	1	100	-0.3103363418182056	
9	CAMPHENE	Fruit Essent. Oil	--	--		
9	CAMPHENE	Essential Oil	--	--		
0	CAMPHOLENE-ALDEHYDE	Essential Oil	--	2000		
0	CAMPHOLENIC-ACETATE	Fruit	--	--		Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
0	CAMPHOLENIC-ALDEHYDE	Fruit	1	7		Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
41	CAMPHOR	Fruit	1	7	-0.8917009005689489	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
41	CAMPHOR	Essential Oil	--	--		

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	CAR-3-ENE	Essential Oil	--	--		
0	CAR-3-ENE	Fruit Essent. Oil	--	--		
0	CARBOHYDRATES	Fruit	226300	730000	-0.2827855072710454	
31	CARYOPHYLLENE	Fruit	12	120	-0.39246549266153086	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
8	CARYOPHYLLENE-OXIDE	Fruit	15	15	-0.895044555279303	
8	CARYOPHYLLENE-OXIDE	Fruit Essent. Oil	--	--		
0	CATECHOL-TANNINS	Fruit	30000	50000		Bisset, N.G., ed. 1994. Herbal Drugs and Phytopharmaceuticals. CRC Press. Boca Raton, FL. 566 pp.
1	CEDRENE	Leaf	12000	36000		
3	CEDROL	Leaf	450	2100		
3	CEDROL	Wood	200	200	-1	
77	CHLOROGENIC-ACID	Leaf	--	--		
1	CHOLESTEROL	Fruit	--	--		Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
24	CHROMIUM	Fruit	1	3.2	-0.0581672201980405	
0	CINEOL	Essential Oil	--	--		
18	CINNAMIC-ACID	Leaf	--	--		
0	CIS-1-ETHOXY-P-MENTH-2-ENE	Fruit	3	30		Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
0	CIS-3-ETHOXY-P-MENTH-1-ENE	Fruit	1	3		Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
0	CIS-4-ETHOXY-THUJANE	Fruit	3	30		Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
1	CIS-ACONITIC-ACID	Leaf	--	--		
0	CIS-CALAMANENE	Fruit Essent. Oil	--	--		
0	CIS-COMMUNAL	Fruit	--	--		
2	CIS-COMMUNIC-ACID	Fruit	--	--		Leung, A.Y., Encyclopedia of Common Natural Ingredients Used in Food, Drugs, and Cosmetics, John Wiley & Sons, New York, 1980.
0	CIS-COMMUNOL	Fruit	--	--		

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
23	CITRIC-ACID	Leaf	--	--		
20	CITRONELLAL	Fruit	160	160	1.1325570680400574	
20	CITRONELLAL	Fruit Essent. Oil	--	--		
15	CITRONELLOL	Leaf	--	--		
2	COBALT	Fruit	4	12.3	0.9539136726283711	
0	COMMUNIC-ACID	Fruit	--	--		Williamson, E. M. and Evans, F. J., Potter's New Cyclopaedia of Botanical Drugs and Preparations, Revised Ed., Saffron Walden, the C. W. Daniel Co., Ltd., Essex UK, 362 pp, 1988, reprint 1989.
4	COSMOIIN	Fruit	--	--		
1	CUPARENE	Wood	300	300	-1	
0	CUPRESSUFLAVONE	Leaf	--	--		
0	CYCLOPOLY(D-GALACTURONIC-ACID)	Fruit	--	--		
0	DEHYDROABIETOL	Fruit	--	--		
8	DELTA-3-CARENE	Fruit	2	20	-0.5797379943407993	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
0	DELTA-3-VARENE	Leaf	--	--		

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
9	DELTA-CADINENE	Fruit	--	--		
1	DELTA-CADINOL	Fruit	1	1	-1	
14	DEOXYPODOPHYLLOTOXIN	Fruit	--	--		
0	DESOXYPICROPODOPHYLLOTOXIN	Fruit	--	--		
8	DESOXYPODOPHYLLOTOXIN	Fruit	--	--		
0	DL-EPICUBENOL	Wood	--	--		
0	EO	Fruit	6200	40000	-0.042481439666032995	
0	EO	Leaf	--	--		
0	EPIAFZELICHIN	Fruit	--	--		
40	EPICATECHIN	Fruit	--	--		
1	ETHYL-LAURATE	Fruit	--	--		Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
1	ETHYL-MYRISTATE	Fruit	1	6	-1	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
1	ETHYL-PALMITATE	Fruit	1	10	-0.6891827096735466	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	ETHYL-PALMITOLEATE	Fruit	1	2		Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
17	FARNESOL	Leaf	--	--		
0	FAT	Fruit	17360	56000	-0.21352859426457804	
0	FAT	Seed	539000	539000	1.441214427871716	CRC Handbook of Medicinal Herbs and/or CRC Handbook of Proximate Analyses
4	FERRUGINOL	Wood	10	10		
61	FERULIC-ACID	Leaf	--	--		
15	FIBER	Fruit	120000	120000	-0.20454875292033714	Pedersen, M. 1987. Nutritional Herbology. Pederson Publishing. Bountiful, Utah. 377 pp.
0	FIBER(CRUIDE)	Fruit	--	120000	-0.26860285043394083	
0	FIBER(DIETARY)	Fruit	--	320000	-0.9715942860730087	
13	FORMIC-ACID	Fruit	1550	5000	1	
8	FRUCTOSE	Fruit	--	--		Leung, A.Y., Encyclopedia of Common Natural Ingredients Used in Food, Drugs, and Cosmetics, John Wiley & Sons, New York, 1980.
7	FUMARIC-ACID	Leaf	--	--		
7	FUMARIC-ACID	Fruit	1550	5000	-0.6004154140938881	

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
62	GALIC-ACID	Leaf	--	--		
2	GALLO-TANNIN	Fruit	--	--		Leung, A.Y., Encyclopedia of Common Natural Ingredients Used in Food, Drugs, and Cosmetics, John Wiley & Sons, New York, 1980.
0	GAMMA-CADINENE	Fruit	16	164	1.8269938624979614	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
0	GAMMA-ELEMENE	Fruit	160	160	1.4137929367070103	
0	GAMMA-ELEMENE	Fruit Essent. Oil	--	--		
0	GAMMA-MUROLENE	Fruit	128	128	-1	
0	GAMMA-MUROLENE	Fruit Essent. Oil	--	--		
11	GAMMA-TERPINENE	Fruit	19	600	-0.540911166794079	
11	GAMMA-TERPINENE	Leaf Essent. Oil	--	--		
0	GEIJERONE	Fruit	--	--		Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
5	GERANYL-ACETATE	Fruit	--	--		

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
2	GERMACRENE-D	Fruit	3	32	1	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
3	GINNOL	Fruit	--	--		
7	GLUCOSE	Fruit	--	--		Leung, A.Y., Encyclopedia of Common Natural Ingredients Used in Food, Drugs, and Cosmetics, John Wiley & Sons, New York, 1980.
4	GLUCURONIC-ACID	Fruit	--	--		Leung, A.Y., Encyclopedia of Common Natural Ingredients Used in Food, Drugs, and Cosmetics, John Wiley & Sons, New York, 1980.
4	GLYCOLIC-ACID	Fruit	--	--		
7	HINOKIFLAVONE	Leaf	--	--		
2	HUMULENE	Fruit	102	102	-0.6157187427092596	
0	HUMULENE-OXIDE	Fruit	9	9		
0	HUMULENE-OXIDE	Fruit Essent. Oil	--	--		
0	HYPOLAETIN-7-O-BETA-D-GLUCOSIDE	Fruit	--	--		
0	IMBRICATOLIC-ACID	Plant	--	--		Hegnauer, R. 1962-1997. Chemotaxonomie der Pflanzen, Bde 1-11. Birkhauser Verlag Basel, Boston, Berlin.

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
6	IRON	Fruit	5	15	-0.4679872255679544	
0	ISOCRYPTOMERIN	Leaf	--	--		
0	ISOCUPRESSIC-ACID	Leaf	--	2637.5		
0	ISOCUPPRESSINIC-ACID	Plant	--	--		Hegnauer, R. 1962-1997. Chemotaxonomie der Pflanzen, Bde 1-11. Birkhauser Verlag Basel, Boston, Berlin.
0	ISOPIMARAL	Fruit	--	--		
2	ISOPIMARIC-ACID	Fruit	--	--		
0	ISOPIMAROL	Fruit	--	--		
3	ISOQUERCETIN	Fruit	--	--		
22	ISOQUERCITRIN	Leaf	--	--		
22	ISOQUERCITRIN	Fruit	--	--		
0	JUNENE	Fruit	--	--		List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
0	JUNICEDRAL	Fruit	--	--		
0	JUNICEDROL	Plant	--	--		J.S. Glasby Dict.Pls Containing 2ndary Metabolite. 1991.

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	JUNIONONE	Fruit	--	--		Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
0	JUNIONONE	Fruit Essent. Oil	--	--		
0	JUNIPERAPRENOL-14	Leaf	--	--		
0	JUNIPERAPRENOL-15	Leaf	--	--		
0	JUNIPERAPRENOL-16	Leaf	--	--		
0	JUNIPERAPRENOL-17	Leaf	--	--		
0	JUNIPERAPRENOL-18	Leaf	--	--		
0	JUNIPERAPRENOL-19	Leaf	--	--		
0	JUNIPERAPRENOL-20	Leaf	--	--		
0	JUNIPEROL	Wood	--	--		J.S. Glasby Dict.Pls Containing 2ndary Metabolite. 1991.
0	KILOCALORIES	Fruit	3410	3410	-0.3805452107665679	Pedersen, M. 1987. Nutritional Herbology. Pederson Publishing. Bountiful, Utah. 377 pp.
1	L-ASCORBIC-ACID	Fruit	--	--		Leung, A.Y., Encyclopedia of Common Natural Ingredients Used in Food, Drugs, and Cosmetics, John Wiley & Sons, New York, 1980.

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
2	L-LIMONENE	Bark	--	--		Chemical Constituents of Oriental Herbs (3 diff. books)
0	L-MALEIC-ACID	Fruit	--	--		Guenther, E., The Essential Oils, 6 volumes, D. van Nostrand, New York, 1948-1952.
0	L-TARTARIC-ACID	Leaf	--	--		
7	LAURIC-ACID	Fruit	--	--		Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.
1	LEUCANTHOCYANIN	Fruit	--	--		List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
60	LIMONENE	Fruit	76	910	-0.6196944860922323	List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
60	LIMONENE	Fruit Essent. Oil	--	--		
60	LIMONENE	Essential Oil	--	31000	-0.5586333216571333	

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	LIMONENE-PEROXIDE	Fruit	--	--		Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
0	LIMONENE-PEROXIDE	Fruit Essent. Oil	--	--		
0	LINALOL	Plant	--	--		
53	LINALOOL	Plant	--	--		
7	LINALYL-ACETATE	Plant	--	--		
27	LINOLEIC-ACID	Plant	--	--		
27	LINOLEIC-ACID	Fruit	--	--		Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.
0	LINOLENIC-ACID	Plant	--	--		
0	LONGIFOLENE	Plant	--	--		J.S. Glasby Dict.Pls Containing 2ndary Metabolite. 1991.
21	LUPEOL	Stem	--	--		
65	MAGNESIUM	Fruit	9	30	-0.9723001521392451	
1	MALONIC-ACID	Leaf	--	--		
14	MANGANESE	Fruit	2	6.3	-0.3619961117886394	
2	MANOOL	Leaf	--	87.5		

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
63	MENTHOL	Fruit	22	22		
63	MENTHOL	Fruit Essent. Oil	--	--		
0	METHYL-CITRONELLOL	Plant	--	--		
0	MYRCECOMMUNAL	Fruit	--	--		
22	MYRCENE	Fruit	110	1800	-0.10348815985421497	
22	MYRCENE	Fruit Essent. Oil	--	--		
22	MYRCENE	Leaf Essent. Oil	--	--		
0	MYRCEOCCOMMUNIC-ACID	Fruit	--	--		Leung, A.Y., Encyclopedia of Common Natural Ingredients Used in Food, Drugs, and Cosmetics, John Wiley & Sons, New York, 1980.
5	MYRTENAL	Fruit	--	--		
5	MYRTENAL	Fruit Essent. Oil	--	--		
0	MYRTENAL-ACETATE	Fruit	--	--		
2	MYRTENOL	Plant	--	--		
0	MYRTENOL-ACETATE	Fruit Essent. Oil	--	--		
3	N-HENTRIACONTANE	Fruit	--	--		

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	N-HEPTACOSANE	Fruit	--	--		
1	N-NONACOSANE	Fruit	--	--		
0	N-PENTATRIACONTANE	Fruit	--	--		
0	N-TRITRIACONTANE	Fruit	--	--		
4	NEPETIN	Leaf	--	--		
0	NEPITRIN	Leaf	--	--		
10	NEROL	Fruit	--	--		
10	NEROL	Fruit Essent. Oil	--	--		
11	NEROLIDOL	Leaf	--	--		
5	NERYL-ACETATE	Fruit	6	60	-0.26098959388736837	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
39	NIACIN	Fruit	4	12	-0.6510092608917062	
0	NONACOSAN-5-10-DIOL	Fruit	--	--		
18	OLEIC-ACID	Plant	--	--		
18	OLEIC-ACID	Fruit	--	--		Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.
0	OPLOPANONE	Fruit	--	--		

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
9	OXALIC-ACID	Leaf	--	--		
25	P-COUMARIC-ACID	Leaf	--	--		
0	P-CYMEN-8-OL	Fruit	1	4	-1	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
16	P-CYMBENE	Fruit	48	480	-0.516224768738665	List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
16	P-CYMBENE	Fruit Essent. Oil	--	--		
0	P-CYMENTOL	Fruit Essent. Oil	--	--		
0	P-CYMOL	Plant	240	240	-0.9534537245333127	
0	P-CYMOL	Leaf Essent. Oil	--	--		
0	P-CYMOL	Essential Oil	--	--		
13	P-HYDROXY-BENZOIC-ACID	Plant	2500	2500	1	
0	P-MENTHA-1,2,4-TRIOL	Plant	--	--		
0	P-MENTHANE	Fruit	2	20		
0	P-MENTHANE	Fruit Essent. Oil	--	--		

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	P-MENTHANE-1-2-4-TRIOL	Fruit Essent. Oil	--	--		
13	PALMITIC-ACID	Plant	--	--		
13	PALMITIC-ACID	Fruit	--	--		Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.
2	PALMITOLEIC-ACID	Seed Oil	--	--		
2	PALMITOLEIC-ACID	Plant	--	--		
24	PECTIN	Fruit	7000	7000	-0.5471395023787067	List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
0	PENTOSAN	Fruit	60000	60000	1	List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
4	PHELLANDRENE	Fruit Essent. Oil	--	--		
0	PHENYL-PYRUVIC-ACID	Leaf	--	--		
4	PHOSPHORIC-ACID	Leaf	--	--		
4	PHOSPHORUS	Fruit	279	900	-0.7034597256399827	
14	POTASSIUM	Fruit	2967	9570	-0.7384457440468485	

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	PROANTHOCYANINS	Fruit	--	--		Leung, A. Y. and Foster, S. 1995. Encyclopedia of Common Natural Ingredients 2nd Ed. John Wiley & Sons, New York. 649 pp.
0	PROTEIN	Fruit	56420	182000	0.9719135979447259	
43	PROTOCATECHUIC-ACID	Leaf	--	--		
176	QUERCETIN	Leaf	--	--		
0	QUERCETIN-3-O-ALPHA-L-ARABINOSYL-GLUCOSIDE	Fruit	--	--		
1	QUINIC-ACID	Leaf	--	--		
0	RESIN	Fruit	80000	100000	0.5011700816956098	
1	RHODOXANTHIN	Leaf	--	--		
15	RIBOFLAVIN	Fruit	0.2	0.6	-0.9443248460470646	
87	RUTIN	Leaf	--	--		
87	RUTIN	Fruit	--	--		
5	SABINENE	Fruit	172	2700	0.3124331852362114	
5	SABINENE	Fruit Essent. Oil	--	--		
5	SABINENE	Essential Oil	--	76000	-0.05757229883510122	
5	SABINENE	Leaf Essent. Oil	--	--		

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	SANDARACOPIMARAL	Fruit	--	--		
0	SANDARACOPIMAROL	Fruit	--	--		
0	SANDAROPIMARIC-ACID	Fruit	--	--		Leung, A.Y., Encyclopedia of Common Natural Ingredients Used in Food, Drugs, and Cosmetics, John Wiley & Sons, New York, 1980.
0	SANTENE	Fruit	--	--		
3	SCIADOPITYSIN	Leaf	--	--		
0	SCUTELLAREIN-7-O-BETA-D-GLUCOSIDE	Fruit	--	--		
60	SELENIUM	Fruit	0.1	0.2	-0.3365919582076448	
0	SELINA-4(14),7(11)-DIENE	Fruit	2	2		
0	SELINAN-4(14)-7(11)-DIENE	Fruit Essent. Oil	--	--		
14	SHIKIMIC-ACID	Leaf	--	--		
4	SILICON	Fruit	1.4	4.5	-0.5938225414098025	
1	SODIUM	Fruit	--	--		
8	STEARIC-ACID	Plant	--	--		
7	SUCCINIC-ACID	Leaf	--	--		

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	SUGAR	Fruit	300000	300000	0.7577686224738679	List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
0	SUGARS	Fruit	24800	80000	-0.5539776886973504	
1	SUGIOL	Wood	--	--		
6	SYRINGIC-ACID	Leaf	--	--		
35	TANNIN	Fruit	50000	50000	-0.42929897796396493	List, P.H. and Horhammer, L., Hager's Handbuch der Pharmazeutischen Praxis, Vols. 2-6, Springer-Verlag, Berlin, 1969-1979.
23	TERPINEN-4-OL	Fruit	13	1050	-0.19930126187699354	
23	TERPINEN-4-OL	Fruit Essent. Oil	--	--		
23	TERPINEN-4-OL	Leaf Essent. Oil	--	--		
23	TERPINEN-4-OL	Essential Oil	--	21000	-0.4130918835519973	
18	TERPINEOL	Fruit Essent. Oil	--	--		
9	TERPINOLENE	Fruit	18	320	1.3982869520915144	
9	TERPINOLENE	Fruit Essent. Oil	--	--		

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
9	TERPINOLENE	Essential Oil	--	--		
31	THIAMIN	Fruit	--	1.2	-0.5290087074554676	
0	THIAMINE	Fruit	0.4	1.2	-1.081392271586632	
0	THUJAN-4-OL	Essential Oil	--	9000		
2	THUJOPSENE	Wood	3700	3700	-1	
4	TIN	Fruit	20	63	-0.1301348957872833	
0	TORULOSAL	Fruit	--	--		
0	TORULOSIC-ACID	Fruit	--	--		Leung, A.Y., Encyclopedia of Common Natural Ingredients Used in Food, Drugs, and Cosmetics, John Wiley & Sons, New York, 1980.
0	TORULOSOL	Fruit	--	--		
0	TRANS-3-ETHOXY-P-MENTH-1-ENE	Fruit	1	10		Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
0	TRANS-4-ETHOXY-PIN-2-ENE	Fruit	7	66		Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
0	TRANS-4-ETHOXY-THUJANE	Fruit	3	30		Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
2	TRANS-ACONITIC-ACID	Leaf	--	--		
0	TRANS-CALAMANENE	Fruit Essent. Oil	--	--		
0	TRANS-COMMUNIC-ACID	Fruit	--	--		Leung, A.Y., Encyclopedia of Common Natural Ingredients Used in Food, Drugs, and Cosmetics, John Wiley & Sons, New York, 1980.
0	TRANS-SABINENE-HYDRATE	Fruit	1	6	-0.5171765141826495	Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
0	TRANS-VERBENOL	Fruit	1	12		Lawrence, B.M., Essential Oils 1976-1977, Essential Oils 1978, Essential Oils 1979-1980.
0	TRICYCLENE	Fruit	--	--		
22	UMBELLIFERONE	Leaf	--	--		
22	UMBELLIFERONE	Shoot	--	--		
22	UMBELLIFERONE	Fruit	--	--		
24	VANILIC-ACID	Leaf	--	--		

Activity Count	Chemical	Plant Part	Low PPM	High PPM	StdDev	Reference Citation
5	VERBENONE	Essential Oil	--	2000	-1	
0	WATER	Fruit	--	690000	-0.35035084474250255	
2	WIDDROL	Wood	100	100	-1	
1	YLANGENE	Fruit	--	--		
77	ZINC	Fruit	--	--		